BENCHMARKING PRIVATE SECTOR FIRE DEPARTMENTS TO AIDE IN CONTRACT MANAGEMENT OF THE KENNEDY SPACE CENTER'S FIRE SERVICE UNDER A PERFORMANCE- BASE TYPE OF CONTRACT

EXECUTIVE LEADERSHIP

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ABSTRACT

The Kennedy Space Center (KSC) Fire Department is a private fire department operating as a part of a large Base Operations Contract (BOC) at KSC. Next fiscal year the BOC will be combined with the neighboring Cape Canaveral Air Station (CCAS) Base Support Contract into a performance-base Joint Base Operations and Support Contract known as J-BOSC. As KSC moves toward performance-base contracts requiring less monitoring, a problem and concern develops in ensuring contract compliance, quality services, and continuous improvement in KSC's Fire Protection Program.

The purpose of this research project was to research private fire department contracts and find out how these contracts are monitored and their services evaluated in order to aide in KSC's transition toward performance-base contracting and Government Owned Contractor Operated type operations.

The descriptive research methodology was used in this research project. The research questions are:

1. Who are some other contracted private fire departments and fire protection program providers of similar size to the KSC Fire Department?
2. What types of contracts are used in providing private fire departments or fire protection programs?
3. How are these contracts monitored and contractors evaluated?

What contractor evaluation methods could the NASA Fire and Emergency Services Office implement to help ensure future continuous improvement in KSC's Fire Protection Program?

A literature review revealed few articles on contracts and evaluation methods for the contracting of private fire services. A telephone survey was developed to better ascertain how private fire departments are evaluated.

The results showed that audits, station visits and observations, performance standards, and reports are the preferred evaluation techniques. The author's recommendations are for KSC to develop a "baseline needs assessment", a corresponding surveillance plan with the above evaluation techniques, maintain good communications, remain flexible and continue bench-marking with other agencies contracting for fire services.

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INTRODUCTION

The National Aeronautics and Space Administration (NASA) is a "contracted" agency utilizing private sector contractors to perform the bulk of the work. The Kennedy Space Center (KSC) Fire Department is presently contracted to a private company, EG&G Florida Incorporated. The KSC Fire Department Services as well as all other parts of KSC's Base Operations Contract (BOC) are in the process of being re-bid under a new contract commencing next fiscal year, October 1, 1998. One of NASA's contracting initiatives as pledged to the Office of Management and Budget is to implement performance-base contracting wherever practicable. Performance-base contracting is contracting for results, not just best efforts (NASA Web Site, 1996). This is viewed as a stepping stone toward government owned contractor operated (GOCO) type operations at KSC within the next ten to fifteen years. Performance-base contracts and GOCO installations have much less involvement from the government oversight persons or office. The government oversight office for KSC's Fire Protection Program is the NASA Fire and Emergency Services Office. As NASA moves toward performance-base types of contracts now and toward GOCO type installations in the future, a serious concern develops in this NASA office related to continuing and ensuring contract compliance, quality services, effective and efficient services, and continuous improvement in KSC's Fire Protection Program.

The purpose of this research project was to research the types of contracts other private fire departments operate under and to find out how these contracts are monitored and the services evaluated in order to maintain a continuously improving Fire Protection Program with less oversight from the NASA KSC Fire and Emergency Services Office. It was also the hopes of the author that the information gathered from this research would better prepare the NASA KSC Fire and Emergency Services Office for performance-base contracting of Fire Services and GOCO type operations.

This research project uses the descriptive research methodology. The research questions to be answered are:

1. Who are some other contracted private fire departments and fire protection program providers of similar size to the KSC Fire Department?
2. What types of contracts are used in providing private fire departments or fire protection programs?
3. How are these contracts monitored and contractors evaluated?
4. What contractor evaluation methods could the NASA Fire and Emergency Services Office implement to help ensure future continuous improvement in KSC's Fire Protection Program?

BACKGROUND AND SIGNIFICANCE

> Dwindling funds. Tightfisted government managers. Uptight elected officials. Fed-up taxpayers. More mandated, costly-to-implement regulations. Evolving, costly technology. Demands for greater accountability. What's today's public fire department to do? Something's got to give. Some pundits say it's the public fire department that should go—the fire service should be opened up to competition from the private sector. "Not so," say others. "Whatever the private sector can do, the public sector can do as well or better." The debate is raging and will rage for some time to come (Dittmar, 1992, p. 81).

In my June 1997 Executive Leadership Course our class discussed some of these pros and cons of fire department privatization. We discussed the growing trend of outsourcing various services and how this applies to fire service functions. We discussed on how one might contract for specific services. NASA, being a contracted agency operated predominantly by contractors rather than civil service, has always had a private fire department since the department's inception. "Federal agencies,

state and local governments, and private organizations are increasingly focused of identifying activities that can be performed effectively by others at less cost. The term "privatization" has been applied to this process, although many of these operations are currently performed by "private" contractors (Kubicki, 1996, p. 57). "This privatization initiative is now encompassing organizations that provide emergency services. It is prompted in part by the perception that the budgets of fire departments and ambulance services may be perceived as excessive (Kubicki, 1996).

As in most all of NASA's contracted functions, KSC has always had an office that monitors the contractor for contract compliance providing contractor oversight, evaluation, technical direction, and program guidelines for KSC's contracted private sector fire department. This office has typically been staffed with civil service fire prevention specialists and fire protection engineers. The ratio of civil service personnel in this office to contractors has been about 1to 40 with only one civil service person having the primary job function of full-time contractor oversight.

Over the years there has been some changes to the KSC Fire Services Contract. Initially it was grouped with Security for three to five year term contracts. However, in 1983 the Fire Services and Security contract was combined with all other base operations support contracts into what is now known as the KSC Base Operations Contract (BOC). The BOC covers fire, security, facility maintenance, maintenance of all utilities, roads and grounds maintenance, environmental, medical, computer support, air traffic control and aircraft support, logistics and other installation operations services. This grouping of contracts into one large contract reduced administrative and contract administration costs due to the fewer number of contracts thus saving federal tax dollars. Additional savings was realized by increasing the term of the contract to 10 years verses three or five. A prime contractor, presently EG&G Florida, Inc., manages the entire BOC, however, small business

subcontractors make up about 25% of the contract. At the time of this research project KSC Fire Services is managed by EG&G Florida, Incorporated. EG&G won the first KSC BOC in 1983 for a 10 year term and won it the second time when it was re-competed in 1993 as a five year contract with five annual options for continuation.

Now under the auspices of re-inventing government and in an effort to save more money NASA KSC is going into a joint contract with the Air Force combining the KSC BOC with the Air Force's Cape Canaveral Air Station (CCAS) Base Support Contract which operates across the Banana Creek River just a few miles away at CCAS. This is to be a long term performance based type contract where a statement of objectives and the existing contract statements of work are provided to potential bidders and the bidders will submit proposals on how they plan to operate and maintain KSC and CCAS under a joint contract entitled Joint Base Operations and Services Contract (J-BOSC). A source selection board will select one of the successful bidders and we will negotiate their proposals for capability and cost. The J-BOSC is expected to start October 1, 1998. Throughout the various contracts and contract changes NASA has maintained a Fire and Rescue Office, now called the Fire and Emergency Services Office, for the primary purpose of ensuring contract compliance, value, and quality from the Fire Services Contractor at KSC.

Another NASA initiative supporting re-inventing government is outsourcing and privatizing ordinary services emphasizing that the downsized civil service workforce spend their time predominantly on research and space technology related work. Civil Service employees are not expected to have as much contact with the contractor as in the past. Contractor performance is to be evaluated by what is being call "insight" verses oversight. Insight involves evaluation through reports, spot surveillance and random sampling. Measurable performance standards are to be established and used for measuring

contractor performance. Surveillance plans are to be established and followed by the NASA Contract Technical Representatives (COTR's). All of this is to allow for evaluation of the contractor with less time and involvement by the NASA COTR. Performance base contracting places the responsibility and in many cases the authority on the contractor to perform the contracted services while the COTR uses insight verses oversight monitoring to accommodate civil service reductions. These two new initiatives are in an effort to save money on both the contractor's side and the NASA side.

The first BOC in 1983 was a cost basis type of contract. Incentives for high performance and efficiency (cost plus award fee with incentives) were implemented along with an initiative entitled "self-sufficiency". The theory of self-sufficiency was to relax NASA involvement and prevent operating like a personal services contract (J. Reynolds, personal communications, November 6,1997). The contractor was to perform with less involvement and direction from the NASA COTR's. The incentives portion of the contract allowed contractors to keep a large portion of any legitimate cost savings they came up with. Typically a percentage of this savings was passed on to the manager or contractor employee responsible for the savings. These two contract initiatives, self-sufficiency and passed on savings incentives, were intended to allow the contractor to be innovative and efficient in providing their services. However, in the case of the KSC Fire Service these initiatives actually were harmful to the Fire Department and the services they were to be providing.

As the number of Shuttle flights increased so did the number of hazardous operations. Many of these hazardous operations required the fire service to be on sight or out of station at a predetermined safe location. The normal solution to handling growing fire service operations was additional staffing. However, a cost saving idea came from the fire chief at the time was to reduce the crew size from four and five to three for the out of station standbys and hazardous operations in order to support more

standbys with the same number of firefighters. The chief was financially rewarded for this idea. As hazardous operations increased the fire service had to support more standbys and a problem developed. In order to hold costs down no increase in staffing took place. Eventually the number of support operations crowded out fire service training time reducing the capability of the KSC Fire Service to protect KSC personnel and property as required by their contract. The NASA Fire and Rescue Office did not get involved initially in order to follow the premise of self-sufficiency. Additionally the size of the NASA Fire and Rescue Office was actually reduced under self-sufficiency for various reasons. By the time of return to flight after the Challenger explosion the effects of self-sufficiency and passed on savings incentives had taken its toll on the KSC Fire Service readiness level. Since this time the Fire and Rescue Office, now called the Fire and Emergency Services Office, was re-staffed. This office has diligently worked with the fire service contractor to remove unnecessary fire service standbys and to reincorporate an appropriate training level back into the KSC Fire Service. Numerous other improvements were implemented into KSC Fire Services such as new apparatus, a new fire station, improved fire stations, increased response capabilities without increased staffing, a higher level of physical fitness, and a growing sense of pride. Today we emphasize a philosophy of continuous improvement throughout all fire service operations.

As NASA KSC moves toward performance-base types of contracts and toward Government Owned Contractor Operated (GOCO) installations, which is viewed as being similar to the previously tried and failed self-sufficiency initiative, there is a great concern whether the KSC Fire Service will remain a top-notch nationally recognized superior fire service organization with a continuous improvement philosophy. Will the KSC Fire Service and KSC's Fire Protection Program degrade back into it's previous state of mediocrity and questionable capability?

LITERATURE REVIEW

The author's review of literature was predominantly conducted at the Learning Resource Center located at the National Fire Academy in June 1997. The purpose of the research was to assist the author in identifying private sector fire departments and to find information on private fire departments, the types of contracts they operate under, and how their performance is evaluated. My first task was to simply try to identify who are some of the private fire departments.

I located one Executive Fire Officer Program (EFOP) paper entitled "Private fire Departments: They Aren't So Bad After All" by Gordon M. Sachs (1996). The reference section of this paper provided me with some articles on privatization and the fire service. This paper also provided some information on contracting issues related to private fire protection services and generally spoke favorably about private fire protection services.

One article by Walsh and Wojcik mentioned several popular private sector fire departments and gave me a good lead on some private sector fire departments via the Private Sector Fire Association (1990). A brochure on the Private Sector Fire Association was found in the Learning Resource Center that provided not only the names of several private fire departments but also their phone number which was a good start (Private Sector Fire Service Brochure, 1996). Dittmar, the associate editor of *Fire Engineering*, wrote an excellent article on the privatization issue and the fire service discussing the cost, personnel, and political aspects of private verses public fire services (1992).

The text, Managing Fire Services by the International City Manager Association (ICMA) had a good section on private sector fire services with a list of typical items and issues in a contract and a list of recommendations the Hall County Administrator suggests to other communities that are considering contracting for private sector fire services (ICMA, 1988). An article by Larson gave good insight into

the United Technologies Corporation Fire Department, a private fire department protecting a site that manufactures solid rocket motors for Titan, D5, AEGIS and Tomahawk systems (1993). This article illustrated how many private sector fire departments augment their full time staff with fire brigades in this case for hazardous materials incidents. A recent article by Laurent found in the *Government Executive* on reinventing government provided some keys to handling cultural change which is helpful information when changing to performance based contracts and changing the way KSC does business (1997).

The two best written resources I was able to find was an article by Dennis Kubicki (1996) on privatization and an EFOP paper by Chief Gary Sharp (1995) researching the effects of change management on the Department of Energy (DOE) contractor fire service organization (1995). The research paper provided a list of several sites that have contracted fire services. Kubicki's article covered privatization of emergency services, suggested how to determine various performance criteria, and gave examples of how this is done at DOE. Kubicki talks about developing a baseline needs assessment to help ensure that a fully capable organization will exist to effectively respond to anticipated emergencies in a timely manner (1996). The review of these two literature documents lead me to telephoning Dennis Kubicki and obtaining a list of private fire departments contracted with DOE, a government agency that has already been exposed to performance-base contracting. A wealth of valuable information was gained by calling the fire departments on this list and by calling their corresponding government evaluator.

Due to the limited number of literature found on private sector fire departments and even less literature on contracting and evaluating private fire departments I was influenced to gather information

through a telephone survey. The Private Sector Fire Service Brochure (1996) and Gary Sharp's research project paper (1995) provided excellent sources for starting my telephone survey.

PROCEDURES

Definition of Terms:

Private Fire Department: An organization operated for profit and providing fire service to the public. Such firms work for governmental entities including federal agencies, cities and counties. Private sector fire departments may operate under a separate contract or under a larger contract that includes more than just fire services.

KSC Fire Department: A private industrial fire department at Kennedy Space Center (KSC) providing fire protection services and managed presently by EG&G Florida Corporation under a NASA Base Operations Contract (BOC).

Base Operations Contract (BOC): A NASA contract for providing maintenance and services such as operations and maintenance of utilities, facilities, security, fire services, grounds maintenance, etc. related to operations at a NASA Center, in the case of this paper, the Kennedy Space Center.

Contractor Technical Representative (COTR): A NASA term for the person who is responsible for monitoring and evaluating the contractor's performance. This is usually a NASA civil service employee.

Research Methodoloy:

This research project was first started by identifying a problem in our Kennedy Space Center Fire Protection Program then describing what was going to be done about the problem in a purpose statement. The specific problem, purpose, and research questions are presented in the

"INTRODUCTION" section of this report. Next, a literature search was performed reviewing available literature, periodicals, EFOP papers and other data primarily using the Learning Resource Center located at the National Fire Academy.

This research project uses the descriptive research methodology. Literature research, telephone calls, Internet search, and a survey were used to identify private sector fire departments operating under contract and how these private fire departments are evaluated. While at the National Fire Academy I took advantage of the Learning Resource Center locating and identifying as many private fire departments as I could and locating information on private fire departments and contracts for their services. Realizing the limited amount of materials on private fire departments and even less material on their contracts I focused on obtaining addresses and telephone numbers of the departments that are private. An article on privatization by Dennis Kubicki (1996), an EFOP paper by Chief Sharp (1995), and a brochure by the Private Sector Fire Association (1996) provided me with a good start with some addresses and phone numbers for several private fire departments contacts.

Upon return to my office I talked with a retired Air Force Fire Chief, Rodney Winningham (R. Winningham, personal communications, July 7, 1997). He provided me with some contacts for the Air Force private fire departments. I was also able to find on Internet a Government Auditing Office (GAO) report on Base Operations: Contracting for Firefighters and Security Guards which provided me with many of the Department of Defense private fire departments (GAO, 1997). I was able to obtain a list of the Department of Energy private sector fire departments from Jim Bisker (J. Bisker, telephone interview, August 22, 1997) and Dennis Kubicki (D. Kubicki, telephone interview, October 7, 1997).

My next task was to review my articles and preliminary interviews and develop a survey of questions that would provide me with private sector fire department contract and contractor evaluation information and insight to answering my research questions. The EFOP "Guidelines for Conducting Surveys" was used for developing and conducting the survey. My research project's purpose and related desired data was listed and kept in mind in developing survey questions. The survey contains both open-ended and closed-ended questions. The draft survey was reviewed and tested by coworker Michael Stevens (personal communication, October 8, 1998) with suggested changes incorporated. Because of the sensitive nature of private sector fire department contracts in this competitive world I thought it best to perform telephone interviews verses just faxing the questionnaire out to the respective private fire departments. The final survey may be found in Appendix A.

The target population for the survey was private fire departments in the United States similar to the KSC Fire Department in size and services. The majority of these private fire departments worked for federal agencies with DOE having the most. However, there are several private companies such as Rural Metro Corporation, Wackenhut Inc. , American Emergency Services Corporation, Pro-Tech Fire Services, Ltd. , Southside Fire Department, and others who offer fire services to cities and counties. Several of the DOE fire departments were found to be fire brigades protecting remote sites having less than 100 employees. After numerous telephone calls, games of telephone tag, and hours on the telephone pertinent data was collected, tabulated and placed in the "RESULTS" section of this report.

Limitations and Assumptions:

It is believed that the research and survey response provides a reasonable sample of the target population, American private fire departments similar in size and services to KSC's Fire Department. Limitations include those shortcomings of the survey questionnaire and process such as

miscommunication or misunderstanding of the question or response or an unwillingness to divulge certain information. Another limiting assumption is that just because certain evaluation techniques are successful for some private fire departments does not necessarily mean that those activities will be beneficial when performed by the NASA KSC Fire and Emergency Services Office of the KSC Fire Department.

RESULTS

My literary review produced several articles, a few research papers and short sections in a few texts that have information on private fire departments. However, these references were very limited on the types of contracts that private sector fire departments operate under and nearly nonexistent on information regarding how to evaluate private sector fire departments operating under a contract. Federal agencies, state and local governments and even private organizations are increasingly looking for activities that can be performed by others via contracts. This is known as "privatization", "contracting out" or "out-sourcing" and organizations that provide emergency services are not exempt. Dennis Kubicki (1996) believes that this is prompted in part by the perception that the budgets of fire departments and ambulance services may be excessive. Elected officials throughout the United States have come out in favor of the privatization concept, but it has generally been limited to clerical and no-public safety operations (Fay, 1996, p.1). The risk in implementing this initiative without sufficient forethought is that, in the absence of comprehensively definitive compliance criteria and explicit performance measures, a significant reduction in emergency response capability may result (Kubicki, 1996, p.57). Wayne Bryan (1991, p. 6) states that in contracting of any service, perhaps the single most important item is the development of a specification describing in detail the desired service with

specific performance criteria. Dennis Kubicki (1996) takes it quite a bit further in ensuring that a fully capable organization will exist to effectively respond to anticipated emergencies in a timely manner by suggesting the development and use of a baseline needs assessment which answers the following questions:

- What is needed?
- Why is it needed?
- When is it needed?
- What is the performance measure?
- Are there potential areas for greater efficiency?

The bottom line is that outsourcing will continue to grow acceptance as federal, state and local governments as well as private industry look for ways to save money.

> Competition for these service contracts save money, usually through a reduction in personnel, regardless of whether they are won by the government or the private sector. However, the magnitude of the savings from outsourcing over time is likely to be less than projected from the initial cost comparison. The Army has reported that only about one-half of the commercial activities studied for outsourcing had lower contract than in-house costs and according to service representatives from the Air Force, Navy, and the Army, contractor performance has been generally satisfactory, although some minor problems have occurred the representatives generally believe that the problems could have been resolved through better contracting and contract oversight practices (GAO, 1997, p. 2&4).

Here lies the author's concern—How to provide better contracting and contract oversight practices? As discussed in the "PROCEDURES" section of this report I set out to tackle this question by finding out who are some of the nation's private fire departments, what types of contracts do they operate under, how are these contracts monitored and evaluated and what methods could the author's

office use to ensure a continued viable fire protection program at the Kennedy Space Center? The results of the specific research questions are as follows:

Who are some other contracted private fire departments and fire protection program providers?

My research indicated that several companies such as Boeing, Westinghouse, EG&G, Lockheed Martin, Bechtel, Dyn Corporation, and Kaiser Hill provide or have provided fire protection services as a prime contractor working for a federal government agency. However, this is not the primary area of expertise for these companies. Most of these companies are large government contractor s that perform operations and maintenance for an entire Department of Defense Base, a Department of Energy Site, or a NASA Center. They hire either directly or through subcontractors employees to perform services such as facility engineering and maintenance, grounds keeping, utility maintenance, janitorial services, employee health services, security , and fire protection services. Companies such as Rural Metro Corporation, Wackenhut Services Incorporated, American Emergency Services Incorporated, Southside Fire Department, and Pro-Tech Fire Services provide predominantly emergency services such as fire, security or emergency medical response. "Private-sector fire services are found principally in the Southeast and the West" (Coleman and Granito, 1988, p. 426). Other companies providing fire protection services exist and I believe the number will grow over the next ten years.

What types of contracts are used in providing private fire departments or fire protection programs?

The private sector offers fire services either by contract (usually to local government) or by subscription (to property owners). In the former case, the private agency becomes the service provider for the government under a formal agreement, and in the latter, the agency collects annual fees in

exchange for the protection of specific properties. Contract services may be arranged on a fixed-price or a cost basis. In a fixed-price contract, the contractor agrees to deliver a specific level and quality of service for a set price. The contractor is responsible for any cost overruns, but also receives the benefit of any cost savings. Under a cost contract, the local government assumes all costs up to a predetermined amount. Cost contracts are generally undesirable because the local government assumes most of the risk (Coleman and Granito, 1988, p. 426).

Through my telephone interviews I found out that with the exception of Naval Submarine Bases, Bangor in Washington state and Kings Bay in Georgia, most all federal agencies contracting for fire protection services are performed via a cost basis contract usually a cost plus award fee type contract (Survey, 1997). Under this type of contract the contractor incurs fairly low risk since the contractor is reimbursed for actual costs of performing the contract services. The contractor may also increase their payments through an award process based on their performance. Bangor Fire Department and Kings Bay Fire Department are contracted under a fixed price contract working under a prime contractor. Much more risk is on the contractor to keep his costs in line with his prenegotiated contract cost or price. Cost over-runs the contractor must absorb. Cost under-runs the contractor can count as additional profit.

Unlike the federal agencies, local governments who contract for fire protection services typically use a fixed price type of contract most of the time and contract with companies that specialize in protective and emergency services such as fire protection. These companies like Rural Metro Corporation and Wackenhut Services Incorporated are often members of the Private Sector Fire Association (Private Sector Fire Association, 1996).

> The Private Sector Fire Association, which represents the seven largest national private sector fire service companies, claims that private services can provide comparable fire protection for 10 to 50 percent less cost than a public fire department, with a typical savings of 25 percent. Private services are able to realize such savings by using reserve firefighters (who are paid only while they are on call), by manufacturing their own equipment, and by taking advantage of technology (Coleman and Granito, 1988, p. 426).

NASA and the Department of Energy (DOE) are federal agencies that are contractor operated having many more contractors than civil service personnel. Contracted fire departments and fire protection programs have been around these "contracted" agencies since their inception. Because NASA and DOE support President Clinton's and Vice President Gore's initiative to reinvent government, both agencies have been taking on large budget cuts and personnel reductions. Contracting-out or "out-sourcing" continues however with a new initiative known as performance-base contracting. Performance-base contracting is one of the hottest topics in the federal government contracting arena.

> Performance-based contracting is contracting for results, not just best efforts. For a contract to be considered as a performance-based contract it cannot be : level-of-effort (either fixed-price or cost reimbursement), Time and Materials, or have a design or detail specification. A performance-based contract must have some kind of contract performance incentive, positive or negative, explicit or implicit (NASA Web Site, 1996).

> NASA's goal for the future must be to limit the involvement of Government employees, place the maximum risk possible back on the contractor and provide contractors flexibility in performing and meeting the Government's actual needs. One method that will assist the Government in achieving this goal is performance-base contracting which places the responsibility for the delivery and quality of the service on the contractor (Contract Types, NASA Course materials,1996, p. 5).

A NASA-wide performance-based contracting awareness program has been conducted to explain the performance-base contracting initiative. NASA plans to implement performance-base contracting where ever it makes sense, including contracts for services, hardware and research and development. Telephone calls to several DOE contracted fire departments let me know that DOE is quite a bit further along than NASA when it comes to having performance-base contracts (Survey, 1997).

How are these contracts monitored and contractors evaluated?

The telephone survey conducted by the author revealed that numerous tools exist for monitoring, evaluating and conducting contractor surveillance of contracted private fire services. Table 1 below is a list of surveillance tools and techniques obtained from the evaluators of the contacted private sector fire service organizations used in determining contractor performance. Table 2 is the evaluation tools the evaluators felt to be the most beneficial.

Assessments
Audits
Checklists
Customer Satisfaction Surveys
Evaluations
Exercise/Simulations/Scenarios
Face-to-face/Station Visits
Metrics/Performance Standards
Questionnaires
Random Sampling
Reports
Self Evaluations

Contractor Evaluation Methods

Table 1

MOST USEFUL EVALUATION TOOLS	American Emergency Services FD	Arnold AFB FD	Bangor Submarine Base FD	Cape Canaveral Air Staion FD	Dyn Corp. of Colorado FD	Hanford FD	Kings Bay Sub Base FD	Lockheed Martin Idaho Tech FD	Pro-Tech Fire Services	Rural Metro	Southside FD	Vance AFB FD	Wackenhut Services Inc	Westing-house Savannah River Co.
Audits								X	X	X	X		X	
Check Lists							X					X		
Station Visits	X	X						X				X		X
Formal Assessments			X				X							
Reports	X									X	X		X	
Performance Standards					X	X								X
Periodic Evaluations												X		
Random Sampling				X								X		
Self Evaluation											X			

Table 2
List of Evaluation Tools Felt Most Effective by Private Fire Department Contractor Evaluators
(Information gathered through telephone survey shown in Appendix A)

The emergency response and protective service specialty companies like Rural Metro and Wackenhut Services Incorporated had much less oversight and evaluation from their local government employers. Formal audits and reports were deemed their most effective evaluation tools. However, in the federal sector "station visits" was considered the most effective. The Air Force and Navy used a lot of checklists when evaluating their contracted fire department. Only DOE was found to be using the performance-base contracting concept and felt that well developed performance standards that are measurable make effective evaluation tools.

What contractor evaluation methods could the NASA Fire and Emergency Services Office implement to help ensure future continuous improvement in KSC's Fire Protection Program?

The survey questionnaire in Appendix A as well as other information gained form conversations with interviewees form the survey provided the author with numerous methods to evaluate the KSC Fire Department. However, the focus of the survey was to obtain evaluation tools that are considered the most effective in determining contractor performance. The survey results indicate from Table 2 that audits, station visits, and reports are the preferred method for effective contractor surveillance. Of the private fire departments surveyed those under contract with federal agencies had fire departments most like NASA KSC's. And out of the federal agencies contracting for fire services DOE is most like NASA KSC in so far as it is a civil service agency with heavy contractor support. The DOD Fire Departments are typically evaluated by military personnel some may have a fire background some may not. Additionally, DOE is operating under performance-base contracts which NASA KSC is going to next fiscal year (October 1, 1998) and has created the concern which this research is centered around. Because of this NASA KSC should be able to successfully implement the evaluation techniques used by

any private sector fire service contract evaluator. However, those used by the federal evaluator, especially DOE, should carry more weight. Specifically the research indicates the following evaluation techniques should be effective when implemented properly at KSC:

1. Formal Audits
2. Station Visits and first hand observation of emergencies and exercises
3. Valid Performance Standards
4. Reports that paint a picture of fire service operations

DISCUSSION

Historically, NASA KSC contracted for fire services. The contracts would specify a level-of-effort to be provided with compliance documents that must be followed rather than results to be achieved.

However, there could be numerous problems with that approach: a) it provides no incentive for contractors to be innovative; b) it is uneconomical for the Government because it hires a "marching army" of contractors for a term of employment, instead of contracting for a job to be completed; c) it may foster a personal services environment wherein NASA is perceived as the "employer" who supervises the efforts of the contractor "employees"; d) it can contribute to a breakdown of project discipline. (When the Project Office becomes concerned with how to keep the contractor busy, unplanned and often unnecessary "extras" may be added to the contractor's tasking.); e) it creates the opportunity for unnecessary enrichment of the labor skill mix, thereby driving up labor costs; and , f) it requires the Government to perform extensive surveillance because, absent clearly stated contract objectives, the contractor must receive continual clarification from Government technical representatives (NASA Web Site, 1997, p. 1-2).

Because of these problems with conventional contracts NASA is moving toward performance-base contracting. The next contract for base operations at KSC will be a joint contract with the Cape Canaveral Air Station and will be a performance-base contract. KSC's Fire Protection Program and Fire Department will be part of this joint base operations contract now known as J-BOSC (Joint Base

Operations and Support Contract). The thought is to save money by combining our NASA KSC contract with the Air Forces' contract thus reducing administration costs and redundant resources and generate other savings by holding the contractor responsible for agreed upon end results. Additionally, more responsibility is to be given to the contractor under performance-base contracting and fewer civil service employees are to be used for evaluation of the services. This creates a cultural change in how the author and those in his office must evaluate the KSC Fire Department.

> Performance-based contracting techniques include: using objective, measurable performance requirements and quality standards in developing statements of work; selecting contractors using performance as a consideration; determining contract type and incentives in accordance with a fair assessment and assignment of performance risk; and performing contract surveillance and administration for insight only into essential areas of contractor performance, and mindful of the need for conservation of Government resources (NASA Web Site, 1997, p. 1).

The implications of this research projects results to KSC's Fire and Emergency Services Office are many. The results of this research project will better prepare the author's office to perform appropriate performance-base contractor evaluations. Interviewing the DOE evaluators, who were in most all cases also fire protection engineers, I was able to learn and better understand what performance-base contracting is and how it works. I have a much better understanding of what transitions are going to take place and how DOE handles their performance-base contracted fire departments. We must expect about two years of transition, turbulence, and confusion. Fire departments with self-pride will rise to the calling of performance-base where other departments may flounder. Many private sector fire department chiefs like having measurable performance standards as their contract evaluation milestones. Patrick Smith of Idaho Falls DOE office feels that being the Authority Having Jurisdiction, having a good working relationship, and approving funding requests

provides sufficient incentive for the contractor to perform and strive to meet or exceed performance standards (Patrick Smith, personal communications, October 29, 1997).

The findings of others and other EFOP papers focused primarily on comparing private fire service organizations to public fire departments whereas my research focuses on how to evaluate private sector fire departments. Since most fire service organizations are not contracted private organizations little information was found by others on contracts related to private fire departments. However, I did find information on private sector fire departments and information in different literature sources on contracting in general. My survey interviews provided that common denominator between the private sector fire department literature found and the literature on contracting services. I feel very competent in understanding private sector fire department contracts after my research was performed.

My interpretations of the results is that some evaluation techniques are better than others, however, all techniques may be useful depending on what is being evaluated. What appears to be more important is having a good relationship with the contractor and hiring a contractor that has self-pride, is self-motivated, proactive, and willing to please. I set out to help the KSC Fire and Emergency Services Office transition into performance-base contracting by identifying what evaluation techniques would be most effective for use in performance-based contracting. What I learned is not just evaluation techniques but some very helpful information in making performance-based contracting much less threatening. I obtained actual performance standards that can be modified for use at KSC. I have obtained checklists used by the Navy and certain DOE sites. I understand the DOE "Baseline Needs Assessment" and how it could be applied at KSC. I have many words of wisdom from those who have been down this path of performance-base contracting for fire services before and can now I can see the light at the end of the tunnel.

RECOMMENDATIONS

Come October 1, 1998 KSC will commence a joint base operations contract with the Cape Canaveral Air Station entitled J-BOSC. This contract is to be a performance-base type of contract placing more responsibility on the contractor and lessening the involvement by government personnel. Joining the two contracts which are now separate will save costs by removing contract administrative and some operational redundancies. Additionally placing more responsibility on the contractor and having less civil service involvement will allow for future planned reductions in the civil service workforce and save additional costs to NASA's budget.

This project dealt with the problem and concern of ensuring contract compliance, quality services, and continuous improvement in KSC's Fire Department and Fire Protection Program under the forthcoming performance-based contract and into future Government Owned Contractor Operated (GOCO) types of contracts and operations. Private sector fire departments and their evaluators were telephone interviewed. Some were under local city or local government contracts and some were under federal government contracts.

The author recommends that the KSC Fire and Emergency Services Office perform a "baseline needs assessment" or a fire/emergency risk assessment for the Kennedy Space Center answering the following questions as they relate to KSC's Fire Protection Program:

1. What is needed?
2. Why is it needed?
3. When is it needed?
4. Are there potential areas for greater efficiency?

Minimum needs must be identified and substantiated for all KSC Fire Protection Program missions such as emergency medical services, hazardous materials incident response, technical rescue, fire prevention inspections and burn permits, fire suppression, fire hydrant flow testing, and fire protection engineering services. When the proposals come back for the new performance-base J-BOSC then it is recommended to review the "Fire" portion of the contract to ensure that minimum needs are capable of being met by the proposing company. It is important that the company that wins the J-BOSC emphasize capability and continuous improvement initiatives. Efficiency and effectiveness of fire services is also paramount and management personnel, structure and operations must also be reviewed.

> Private fire departments need to be concerned with the possibility that, if they do not meet the requirements of the contract, or if the municipality simply doesn't like the quality of service the contractor is providing, the municipality simply replaces the contractor. Thus, profits are not always a requirement for a private fire service provider to stay competitive in a municipality. A private provider may bid low to provide service in one area if they are making an adequate profit elsewhere, using those profits to offset any losses in the new service area (Sachs 1996, p. 17).

The author also recommends for the KSC's Fire and Emergency Services Office to develop a surveillance plan that corresponds with this baseline needs assessment for the new forthcoming contract. The surveillance plan should incorporate the evaluation tools felt most effective by other private sector fire department evaluators which are:

1. Formal Audits
2. Station Visits and first hand observation of emergencies and exercises
3. Valid Performance Standards
4. Reports that paint a picture of fire service operations

As time passes and KSC moves more and more into GOCO type operations the Fire and Emergency Services Office must transition into less and less hands-on and use the above evaluation tools with diminishing involvement in the KSC Fire Department's everyday operations.

It is recommended that the KSC Fire and Emergency Services Office as well as the KSC Fire Department be flexible in adjusting to this new way of doing business and contracting services. KSC Fire and Emergency Services Office and the KSC Fire Department should continue maintaining healthy communications and continue bench-marking with other agencies that contract fire services and gathering helpful information as KSC participates in the transition of government agencies toward performance-base contracting.

REFERENCES

Bryan, H. Wayne. (1991). Privatization Principles: Enhancing Public Sector Fire Protection Services. (Executive Fire Officer Program Applied Research Project). (Emmitsburg, MD: National Fire Academy).

Coleman, Ronny L. and Granito, John A. (1988). Managing Fire Services. (Second Edition). Washington D.C.: International City Management Association.

Ditmar, Mary Jane, (1992, September). Ownership of the Fire Service: The Privatization Issue. Fire Engineering. pp. 81-94.

Fay, Jim, (1997, January 17). Fire Department Privatization: Public safety vs. Public Finances? EmergencyNet NEWS Service. p. 1.

Government Auditing Office (GAO) Report Number: NSIAD-97-200BR (1997, August 12). Base Operations: Contracting for Firefighters and Security Guards. GAO Briefing Report.

KSC Homepage Development Team (1997, November). J-BOSC. KSC's Web Site. http://www.ksc.nasa.gov Business Opportunities, J-BOSC.

Kubicki, Dennis (1996, December). Privatization: Some Practical Realities. Fire Engineering, pp. 57-59.

Larson, Randall D. (1993, June). Profile on United Technologies Corporation Fire Department San Jose, CA. American Fire Journal, pp. 38-43.

Laurent, Anne (1997, July). Reinventing Government Cultural Revolution. Government Executive, pp.15-16.

Private Sector Fire Association (1996). Questions and Answers about the Private Sector Fire Service. Arlington Heights, IL: Private Sector Fire Association.

NASA (1996). Contract Types. National Aeronautical and Space Administration Contracting Course Materials (1997, June).

Sachs, Gordon, M. (1996, September). Private fire Departments: They Aren't so Bad After All. (Executive Fire Officer Program Applied Research Project). (Emmitsburg, MD: National Fire Academy).

Sharp, Gary, N. (1995, February). Effects of Change Management on Department of Energy Contractor Fire Service Organization. (Executive Fire Officer Program Applied Research Project). (Emmitsburg, MD: National Fire Academy).

Walsh, Michelle, B. and Wojak, Karen (1990, January). What can the Public Fire Service Learn from Private Departments? Fire Chief, pp. 37-44.

Appendix A

PRIVATE FIRE DEPARTMENT CONTRACT TYPES QUESTIONAIRE

1. Fire Department
   Name:_____
   Address:_____
   _____
   Phone Number:_____
   FAX Number:_____

2. Name and position of person interviewed:_____

3. Fire Department type:
   All paid ___ All Volunteer ___ Fire Brigade ___ Combination (list) _____

4. What is the size of your fire department?

5. Does your fire department operate under a contract or a subscription service?

6. If a contract what type is used?

   A. Fixed Price Contract
      1. Firm Fixed Price ___
      2. Fixed Price Incentive ___
      3. Other _____

   B. Cost Basis Contract
      1. Cost Plus Incentive Fee
      2. Cost Plus Award Fee

7. What services are provided under the agreement/contract?

8. What is the length of your fire service contract?

9. How long have you had the fire service contract at this location?

10. Is your fire services a subpart of a larger contract?
    If so, what does the larger contract cover?

11. If fire services is part of a larger contract what other services are provided?

12. What is the length of your contract?

13. What is the annual cost for the fire services?

14. Who is responsible for contract evaluation?

15. Who is responsible for contract payment?

16. How is contract performance measured?

17. How is the contractor evaluated and what evaluation methods are used?

18. How often is contact made with the contractor for evaluation purposes?

19. Would you consider your fire service contract performance based?

20. In your opinion what evaluation methods or other methods prove most effective in ensuring contract compliance?